

REMARKS

Claims 7-15 and 18 remain pending in the present application. Claims 7 and 12 have been amended. Basis for the amendments can be found throughout the specification, claims and drawings as originally filed.

REJECTION UNDER 35 U.S.C. § 103

Claims 7-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over De Molina, et al. in view of Lee or Dressell, Jr., et al. ('415). Applicant respectfully traverses this rejection by the Examiner. De Molina, et al. does not show a plurality of holes formed in a helical pattern where the sleeve covers all of the holes to fully close the third flow path.

The Examiner looks to Lee or Dressell, Jr. ('415) to provide the teachings of this idea. Lee discloses a plurality of orifices 34 which may be arranged in a helical pattern. Lee fails to disclose, teach or even suggest that the plurality of holes are simultaneously covered. Claim 1 has been amended to define the sleeve as being operable to progressively close the third flow path by sequentially covering the plurality of holes and to fully close the third flow path by simultaneously closing the plurality of holes. The piston in Lee simply passes over each hole and is not concerned with sequentially closing them or simultaneously closing all of them.

Dressell does not disclose a plurality of holes formed in a helical pattern. Dressell discloses metering ports 80, 82 and 84 (Figure 2) and holes 134 (Figure 10) formed at regular intervals in cylinder 20. Figure 2 illustrates a plurality of grooves 86, 88 and 90 that are V-shaped grooves (Figure 6) and Figure 10 illustrates a groove 132

which is in the shape of a spiral. Thus, it is the groove that is helical in Dressell and not the plurality of holes. In addition, the rotation of cylinder 20 does not sequentially close the plurality of holes, it simultaneously closes all of the holes (column 7, lines 64-68).

Thus, Applicant believes Claim 7, as amended, patentably distinguishes over the art of record. Likewise, Claims 8-11, which ultimately depend from Claim 7, are also believed to patentably distinguish over the art of record. Reconsideration of the rejection is respectfully requested.

Claims 12-15 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over De Molina in view of Dressell, et al. '415 or Schupner '122. Applicant respectfully traverses this rejection by the Examiner. De Molina, et al. does not show a third passageway comprised of a single hole and groove with a depth of the groove decreasing from the hole to a terminal end where the sleeve simultaneously covers the hole and groove to close the third flow path.

The Examiner looks to Dressell, et al. '415 or Schupner to provide this teaching. Dressell discloses ports 80, 82 and 84 in communication with a spiral groove 132. A plurality of holes are formed in the groove wall at regular intervals. Rotation of sleeve 20 causes the closing of ports 80, 82 and 84 as spiral groove 132 becomes mis-aligned with ports 80, 82 and 84.

Claim 12 has been amended to define the sleeve as having a hole located at a base of a groove, the groove extending from the hole to a terminal end to create a third flow path. A depth of the groove decreases from the hole to the terminal end, the sleeve simultaneously covering the hole and the groove to fully close the third flow path. Dressell discloses groove 132 but groove 132 does not decrease in depth as is defined

by the present invention. In reviewing Figure 10 and the specification in column 7, line 30-45, groove 132 is a rectangular spiral groove with a pitch being an integral division of the distance between ports 80, 82 and 84. There is nothing disclosed regarding the decreasing depth of the groove from the hole to the terminal end. In addition, Claim 12 defines a progressive closing of the groove from the hole to the terminal end. Dressell, et al. closes his flow path by mis-aligning groove 132 from ports 80, 82 and 84 simultaneously.

Schupner discloses slots 70-73 which do not include a hole located in their base since holes 47-50 are located in a different component. In addition, Schupner does not disclose, teach or suggest a groove having a decreasing depth from the hole (there is no hole in Schupner) to a terminal end. Finally, Schupner does not disclose the progressive closing from the hole to the terminal end. Schupner, similar to Dressell, closes his flow path by mis-aligning slots 70-73 from holes 47-50 simultaneously.

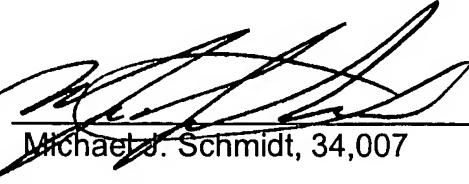
Thus, Applicant believes Claim 12, as amended, patentably distinguishes over the art of record. Likewise, Claims 13-15 and 18, which ultimately depend from Claim 12, are also believed to patentably distinguish over the art of record. Reconsideration of the rejection is respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office

Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

By: 
Michael J. Schmidt, 34,007

Dated: October 7, 2004
HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

MJS/pmg